National Nuclear Security Administration

Nevada Operations Office News

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National Nuclear Security Administration Scientists to Continue *Oboe* Series of Subcritical Experiments

Scientific Data to Help Certify and Ensure the Safety and Reliability of the Stockpile Without Nuclear Testing

The National Nuclear Security Administration Nevada Operations Office will continue the *Oboe* series of subcritical experiments at the Nevada Test Site on September 26, when they conduct *Oboe 8.*

Subcritical experiments produce essential scientific data and technical information to support the National Nuclear Security Administration's Stockpile Stewardship Program to maintain the safety and reliability of the United States nuclear weapons stockpile without underground nuclear testing. The experiments are subcritical because no critical mass is formed, therefore, no self-sustaining nuclear chain reaction can occur, thus there is no nuclear explosion.

The Lawrence Livermore National Laboratory (LLNL) subcritical experiments are designed to answer questions about ejecta and spall associated with plutonium. Ejecta is a violent spray of particles that are propelled from a material's surface when it is compressed by a powerful shock wave. Spall is the breakup of material from the explosive shock wave reflected back from the surface.

The *Oboe* series uses expendable containment vessels that allow the scientists to reuse the alcove. This also makes it easier to plan future experiments.

The series of experiments is being conducted at the Nevada Test Site's U1a Complex located 85 miles northwest of Las Vegas. The U1a Complex is designed to contain these experiments in a safe and secure environment in an underground laboratory of horizontal tunnels with small excavated experiment alcoves mined at the base of a vertical shaft, approximately 960 feet beneath the surface.

Lawrence Livermore scientists conducted their last subcritical experiment – *Oboe 6,* on December 14, 2000.